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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,557	01/16/2001	Mati Amit	TI-31019	5932
23494	7590	07/13/2006	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265				CHANG, RICHARD
		ART UNIT		PAPER NUMBER
		2616		

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/761,557	AMIT, MATI	
	Examiner Richard Chang	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 12 April 2006.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-26 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-6, 10-15, 17 and 20-25 is/are rejected.  
 7) Claim(s) 7-9, 16, 18-19 and 26 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 24 May 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1)  Notice of References Cited (PTO-892)  
 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4)  Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_  
 5)  Notice of Informal Patent Application (PTO-152)  
 6)  Other: \_\_\_\_\_

## DETAILED ACTION

### ***Response to Amendment***

1. Applicant's amendment and arguments, filed on 04/12/2006, with respect to claims 1-26 have been fully considered but they are not persuasive. Examiner does not withdraw the anticipated rejection to Jeng. The following comments fully address applicant's argument with respect to the rejection.

-- Applicant argues the limitations of "element equivalent to a first IC" as recited in claims 1 (see last paragraph, page 7) and "a first IC including two distinct sub-elements: one or more receivers and first MAC" (see 2nd paragraph, page 8) no taught by the reference. Examiner respectfully disagrees for the reason below.

Jeng teaches a device for bridging Local Area Networks (a communication device for a cable communications network) which covers all the functions in claim 1 comprising of a first Ethernet receiving path module (40) including one or more receivers (42, 50) and a first media access control (MAC) function (46) in the receiving path (See Fig. 2, Col. 3, line 55 to Col. 4, line 65) and refer to prior art that this could be in chip format as DECchip 21140A (See Fig. 1, Col. 2, lines 4-10). This is functionally and in structure equivalent to 1<sup>st</sup> IC and multiple receivers in the receiving path. Jeng further teaches that a second Ethernet transmitting path module (40) including one or more transmitters (42, 52) and a second MAC function (48) in the transmission path (See Fig. 1, Col. 2, lines 4-10) and could be also in chip format as DECchip 21140A

(See Fig. 2, Col. 3, line 55 to Col. 4, line 65). This is functionally and in structure equivalent to 2<sup>nd</sup> IC and multiple transmitters in the transmission path.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate all the receivers associate with MAC function into 1<sup>st</sup> IC and all the transmitters associate with MAC function into 2<sup>nd</sup> IC as it would be merely a matter of obvious engineering choice since it has been held by In re Larson, 340 F.2d 965, 968, 144 USPQ 347,349 (CCPA 1965).

In particular, first Ethernet receiving path module covers all functions for the claimed limitations in both discrete format as well as in integrated chip format and it would be merely a matter of obvious engineering choice to combines these function in the IC format for the same function, thus all the functional limitation in claims 1 is taught by Jeng.

-- Applicant argues the limitations of "an analog-to-digital converter coupled to first IC" and "an upconverter coupled to 2nd IC" (see 4th paragraph, page 8) not taught by Jeng. Examiner respectfully disagrees for the reason below.

As discussed above, this claim has limitation that is similar to those of claim 2 and Jeng further teaches that, in the receiving path, PHY (28) translates the Ethernet wire signal to the TTL digital level in the well-known Ethernet protocol hierarchy over Ethernet line (26), thus the PHY 28 provides all the functions in the receiving path including an analog to digital (A/D) converter coupled to an TTL input, which is equivalent to the "an analog-to-digital converter coupled to first IC" (See Fig. 1, Col. 1, line 65 to Col. 2, line 4). Similarly, in the transmission path, PHY (28) translates the TTL

digital level in the well-known Ethernet protocol hierarchy to the Ethernet wire signal over Ethernet line (26), which is equivalent to the "up converter coupled to an output of the second IC".

In particular, the PHY 28 covers all the functions including an analog to digital converter coupled to an input of the first IC and an up converter coupled to an output of the second IC and it would be merely a matter of obvious engineering choice to combines these function as in claim 2 for the same function, thus all the functional limitation in claims 2 is taught by Jeng.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 17 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 5,892,768 ("Jeng").

Regarding claims 1 and 20, Jeng teaches a device for bridging Local Area Networks (a communication device for a cable communications network) comprising of a first Ethernet receiving path module including one or more receivers (42, 50) and a first media access control (MAC) function (46) and

a second Ethernet transmitting path module including one or more transmitters (42, 52) and a second MAC function (48), wherein the first and second modules are coupleable to a communications network (26) for controlling the downstream and upstream communications, respectively (See Fig. 2, Col. 3, line 55 to Col. 4, line 65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate all the receivers associate with MAC function into 1<sup>st</sup> IC and all the transmitters associate with MAC function into 2<sup>nd</sup> IC as it would be merely a matter of obvious engineering choice since it has been held by In re Larson, 340 F.2d 965, 968, 144 USPQ 347,349 (CCPA 1965).

Regarding claim 2, as discussed above, this claim has limitation that is similar to those of claim 1 and Jeng further teaches that PHY (28) translates the Ethernet wire signal to the TTL digital level in the well-known Ethernet protocol hierarchy over Ethernet line (26) (an analog to digital (A/D) converter coupled to an input of the first IC and an up converter coupled to an output of the second IC) (See Fig. 1, Col. 1, line 65 to Col. 2, line 4), thus it is rejected with the same rationale applied against claim 1 above.

Regarding claim 17, as discussed above, this claim has limitation that is similar to those of claim 1 and it would have been obvious to one of ordinary skill in the art at the time the invention was made to iterate the same structures and functions to a plurality of the repeating functional blocks to perform a plurality of the functions as in claims 1, thus it is rejected with the same rationale applied against claim 1 above.

Regarding claim 21, as discussed above, this claim has limitation that is similar to those of claim 20 and Jeng further teaches that as the Ethernet-HDSL converter, the

downstream direction would from PHY (42) to MAC (44) as receiving direction (See Fig. 1, Col. 1, line 65 to Col. 2, line 4), thus it is rejected with the same rationale applied against claim 20 above.

Regarding claim 22, as discussed above, this claim has limitation that is similar to those of claim 20 and Jeng further teaches that as the Ethernet-HDSL converter, the upstream direction would from MAC (44) to PHY (42) as transmitting direction (See Fig. 1, Col. 1, line 65 to Col. 2, line 4), thus it is rejected with the same rationale applied against claim 20 above.

4. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,574,240 ("Tzeng") in view of US patent No. 6,567,195 ("Ford et al.").

Regarding Claim 11, Tzeng teaches a method and network switch for performing layer 2 (L2) and layer 3 (L3) switching in a gigabit Ethernet (IEEE 802.3) network (10) (See Fig. 1) comprising of

a L2/L3 switch (25) coupled to the gigabit interface (16),  
a central processing unit (CPU, 26) coupled to the L2/L3 switch (25),  
a plurality of transmitters (20) coupled to the L2/L3 switch (25) and a plurality of receivers (20) coupled to the L2/L3 switch (25) (See Fig. 1, Col. 3, lines 16-41), and  
a MAC function (20) coupled to receiver and a MAC function (20) coupled to transmitter (20/22 MAC module) (See Fig. 1, Col. 3, lines 29-43).

Tzeng teaches substantially all the claimed invention but did not disclose expressly the particular application involving limitations of "a fiber interface for the gigabit network".

Ford et al. teach a method and system of the gigabit local area networks wherein the transceiver unit (500) of the NIC using optical carrier over the fiber interface (304, 305) for gigabit transmission (See Fig. 5, Col. 4, lines 9-22).

A person of ordinary skill in the art would have been motivated to employ Ford et al. in Tzeng in order to obtain a method and network switch for performing layer 2 and layer 3 switching in a gigabit network and to take advantage of using a fibre interface for a gigabit network in claim 11.

The suggestion/motivation to do so would have been to use a fibre interface for a gigabit network, as suggested by Ford et al. in Col. 4, lines 9-22. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Ford et al. with Tzeng to obtain the inventions specified in claim 11.

Regarding claim 12, as discussed above, this claim has limitation that is similar to those of claim 11 and Tzeng further teaches that data packets received at the fiber interface (16) are provided to the transmitters (20) without being read by the CPU (26) (See Fig. 1, Col. 3, lines 16-41), thus it is rejected with the same rationale applied against claim 11 above.

5. Claims 3-6, 10, 13-15 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,574,240 ("Tzeng") in view of US patent No. 6,567,195 ("Ford et al.") and US patent No. 5,892,768 ("Jeng").

Regarding claims 3, 13 and 24, as discussed above, these claims have limitation that is similar to those of claims 2, 11 and 20, and Tzeng further teaches that data packets received at the fiber interface (16) are provided to the receivers (20) without being read by the CPU (26) (See Fig. 1, Col 3, lines 16-41), thus it is rejected with the same rationale applied against claims 2, 11 and 20 above.

Regarding claims 4, 15 and 25, as discussed above, these claims have limitation that is similar to those of claims 1, 11 and 24, and Tzeng further teaches that the CPU (26) may periodically downloads and learns the IP address table (64) from the L3 switching logic (44) (adapted to download a table containing instructions for routing the data packets) (See Fig. 6, Col. 7, lines 46-59), thus it is rejected with the same rationale applied against claims 1, 11 and 24 above.

Regarding claim 5, as discussed above, this claim has limitation that is similar to those of claim 1 and Tzeng further teaches that the CPU (26) is coupled with a plurality of MAC's (22) (first MAC and second MAC IC's) (See Fig. 1, Col. 3, lines 29-30), thus it is rejected with the same rationale applied against claim 1 above.

Regarding claims 6 and 14, as discussed above, these claims have limitation that is similar to those of claims 1 and 11, and Tzeng further teaches that the CPU (26) may remotely program another switch (remote from the communication device) (See Fig. 1,

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Col. 4, lines 2-9), thus it is rejected with the same rationale applied against claim 1 and 11 above.

Regarding claims 10 and 23, as discussed above, these claims have limitation that is similar to those of claims 1 and 20, and Tzeng further teaches an integrated multiport switches (12) (hub) (See Fig. 1, Col. 3, lines 17-19), thus it is rejected with the same rationale applied against claim 1 and 20 above.

#### ***Allowable Subject Matter***

6. Claims 7-9, 16, 18-19 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if no art rejection can be applied.

#### ***Examiner's Statement of Reasons for Allowance***

7. The following is an examiner's statement of reasons for allowance:

The prior art along or in combination fails to teach or make obvious the limitations that specifically comprises:

"the first MAC function is adapted to handle defragmentation, deconcatenation, suppress packet payload headers, and perform reverse payload header suppression" as recited in the dependent claim 7.

"the second MAC function is adapted to encrypt packets, handle payload header suppression, and put Ethernet packets inside an MPEG frame" as recited in the dependent claims 8, 16, 18 and 26.

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is (571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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